

## Chapter 3: Operations on Large Numbers

### Warm-up

1. Difference in length of roller coasters in Japan =  $2479 \text{ m} - 2045 \text{ m} = 434 \text{ m}$ .
2. Length of 3 times The Ultimate =  $2268 \text{ m} \times 3 = 6804 \text{ m} = 6 \text{ km } 804 \text{ m}$  which is less than 10 km.
3. Total cost =  $1300 \times 12 \times 7 \times 5 \text{ dollars} = 5,46,000 \text{ dollars}$ .
4. Roller coaster runs in an hour =  $1470 \div (32 \times 3) = 1470 \div 96 \Rightarrow Q = 15, R = 30 \Rightarrow 16 \text{ times approx.}$

### Class Work (Pg 35)

① ①

$$\begin{array}{r} 1. \text{ (a)} \quad 2 \ 8 \ 5 \ 9 \ 3 \ 6 \ 1 \ 4 \\ + \ 8 \ 9 \ 3 \ 4 \ 1 \ 1 \ 2 \ 3 \\ \hline 1 \ 1 \ 7 \ 9 \ 3 \ 4 \ 7 \ 3 \ 7 \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{ccccccc} \textcircled{1} & & \textcircled{1} & \textcircled{1} \\ 1 & 8 & 0 & 3 & 2 & 8 & 1 & 5 \\ + & 9 & 0 & 3 & 4 & 6 & 1 & 7 \\ \hline 2 & 7 & 0 & 6 & 7 & 4 & 3 & 2 \end{array} \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \begin{array}{cccccccc} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 1 & 4 & 9 & 3 & 8 & 7 & 9 & 1 & 4 \\ & 2 & 0 & 0 & 3 & 5 & 1 & 5 & 3 \\ + & 2 & 5 & 8 & 7 & 1 & 3 & 2 & 3 & 4 \\ \hline 4 & 2 & 8 & 1 & 3 & 6 & 3 & 0 & 1 \end{array} \end{array}$$

$$\begin{array}{r} \text{2. (a)} \quad \begin{array}{ccccccc} \textcircled{3} \textcircled{13} & \textcircled{4} \textcircled{18} \textcircled{9} \textcircled{12} \\ 2 & \cancel{4} & \cancel{3} & 1 & \cancel{5} & \cancel{9} & \cancel{0} & \cancel{2} \\ - & 2 & 0 & 5 & 1 & 2 & 9 & 7 & 3 \\ \hline & 3 & 8 & 0 & 2 & 9 & 2 & 9 \end{array} \end{array}$$

$$\begin{array}{r} \text{(b)} \quad \begin{array}{ccccccc} \textcircled{2} \textcircled{13} \textcircled{2} \textcircled{13} \textcircled{17} & \textcircled{0} \textcircled{17} \\ \cancel{3} & \cancel{3} & \cancel{3} & \cancel{4} & \cancel{7} & 8 & \cancel{1} & \cancel{7} \\ - & 5 & 2 & 8 & 9 & 6 & 0 & 8 \\ \hline 2 & 8 & 0 & 5 & 8 & 2 & 0 & 9 \end{array} \end{array}$$

$$\begin{array}{r} \text{(c)} \quad \begin{array}{cccccccc} \textcircled{5} \textcircled{13} \textcircled{12} \textcircled{9} \textcircled{10} & \textcircled{6} \textcircled{15} \\ 5 & \cancel{6} & \cancel{4} & \cancel{3} & \cancel{0} & \cancel{0} & 9 & \cancel{7} & \cancel{5} \\ - & 2 & 5 & 6 & 5 & 1 & 2 & 8 & 5 & 6 \\ \hline 3 & 0 & 7 & 7 & 8 & 8 & 1 & 1 & 9 \end{array} \end{array}$$





# Exercise 3A

1. (a) 
$$\begin{array}{r} \textcircled{1} \quad \textcircled{1} \quad \textcircled{1} \textcircled{1} \\ 1\ 6\ 5\ 9\ 3\ 8\ 9\ 0\ 3 \\ + 2\ 8\ 1\ 6\ 2\ 7\ 8\ 6\ 2 \\ \hline 4\ 4\ 7\ 5\ 6\ 6\ 7\ 6\ 5 \end{array}$$

(b) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \quad \quad \textcircled{1} \quad \textcircled{1} \textcircled{1} \\ 7\ 6\ 5\ 4\ 2\ 8\ 0\ 9\ 7 \\ + 8\ 9\ 3\ 5\ 6\ 8\ 9\ 3 \\ \hline 8\ 5\ 4\ 7\ 8\ 4\ 9\ 9\ 0 \end{array}$$

(c) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \quad \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 9\ 5\ 4\ 5\ 6\ 3\ 7\ 8 \\ + 3\ 9\ 7\ 2\ 8\ 4\ 6\ 5\ 0 \\ \hline 4\ 9\ 2\ 7\ 4\ 1\ 0\ 2\ 8 \end{array}$$

(d) 
$$\begin{array}{r} \textcircled{2} \textcircled{1} \textcircled{2} \textcircled{1} \textcircled{1} \textcircled{1} \\ 9\ 7\ 6\ 4\ 3\ 2\ 3\ 8 \\ 5\ 0\ 9\ 6\ 7\ 6\ 4\ 2 \\ + 8\ 5\ 9\ 8\ 3\ 7 \\ \hline 1\ 4\ 9\ 4\ 7\ 0\ 7\ 1\ 7 \end{array}$$

(e) 
$$\begin{array}{r} \textcircled{1} \textcircled{2} \textcircled{1} \textcircled{1} \textcircled{2} \textcircled{1} \\ 7\ 3\ 5\ 6\ 4\ 1\ 2\ 1 \\ 9\ 2\ 4\ 7\ 3\ 7\ 8\ 7 \\ + 1\ 3\ 8\ 9\ 4\ 2\ 9\ 6 \\ \hline 1\ 7\ 9\ 9\ 3\ 2\ 2\ 0\ 4 \end{array}$$

(f) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \quad \textcircled{1} \textcircled{1} \\ 8\ 9\ 0\ 3\ 4\ 1\ 2\ 6\ 5 \\ 2\ 1\ 8\ 1\ 2\ 6\ 4\ 5\ 9 \\ + 7\ 4\ 2\ 9\ 5\ 8\ 0\ 0\ 3 \\ \hline 1\ 8\ 5\ 1\ 4\ 2\ 5\ 7\ 2\ 7 \end{array}$$

2. (a) 
$$\begin{array}{r} \textcircled{1} \textcircled{17} \textcircled{4} \textcircled{13} \textcircled{12} \textcircled{17} \textcircled{10} \\ 8\ 2\ 7\ 5\ 4\ 3\ 8\ 0 \\ - 1\ 0\ 8\ 1\ 7\ 5\ 9\ 3 \\ \hline 7\ 1\ 9\ 3\ 6\ 7\ 8\ 7 \end{array}$$

(b) 
$$\begin{array}{r} \textcircled{6} \textcircled{11} \textcircled{3} \textcircled{17} \textcircled{8} \textcircled{9} \textcircled{17} \\ 4\ 4\ 7\ 4\ 7\ 9\ 0\ 7 \\ - 3\ 6\ 5\ 1\ 8\ 6\ 9\ 8 \\ \hline 4\ 1\ 0\ 6\ 2\ 9\ 2\ 0\ 9 \end{array}$$

(c) 
$$\begin{array}{r} \textcircled{4} \textcircled{15} \quad \quad \textcircled{7} \textcircled{9} \textcircled{11} \\ 5\ 5\ 8\ 2\ 5\ 8\ 0\ 4 \\ - 7\ 2\ 1\ 0\ 2\ 1\ 6\ 2 \\ \hline 4\ 8\ 6\ 1\ 5\ 5\ 8\ 5\ 2 \end{array}$$

(d) 
$$\begin{array}{r} \textcircled{7} \textcircled{16} \textcircled{14} \textcircled{9} \textcircled{9} \textcircled{11} \textcircled{8} \textcircled{10} \\ 8\ 7\ 5\ 0\ 0\ 1\ 9\ 0 \\ - 9\ 9\ 6\ 4\ 3\ 8\ 5 \\ \hline 7\ 7\ 5\ 3\ 5\ 8\ 0\ 5 \end{array}$$

3. 
$$\begin{array}{r} \textcircled{7} \textcircled{9} \textcircled{9} \textcircled{9} \textcircled{9} \textcircled{9} \textcircled{10} \\ 8\ 0\ 0\ 0\ 0\ 0\ 0\ 0 \\ - 7\ 9\ 6\ 2\ 3\ 6\ 0 \\ \hline 7\ 2\ 0\ 3\ 7\ 6\ 4\ 0 \end{array}$$

4. (a) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \textcircled{1} \\ 2\ 8\ 9\ 4\ 6\ 8\ 3\ 7 \\ + 7\ 9\ 6\ 8\ 5\ 4\ 9\ 8 \\ \hline 1\ 0\ 8\ 6\ 3\ 2\ 3\ 3\ 5 \\ - 9\ 9\ 9\ 8\ 6\ 9\ 9\ 9 \\ \hline 8\ 6\ 4\ 5\ 3\ 3\ 6 \end{array}$$

(b) 
$$\begin{array}{r} \textcircled{1} \textcircled{1} \quad \textcircled{1} \textcircled{1} \textcircled{1} \quad \text{Add (+)} \quad \text{Add (-)} \\ 3\ 7\ 5\ 1\ 8\ 6\ 7 \\ + 8\ 5\ 9\ 6\ 1\ 7\ 8\ 9 \\ \hline 8\ 9\ 7\ 1\ 3\ 6\ 5\ 6 \\ - 6\ 8\ 7\ 2\ 0\ 4\ 0\ 7 \\ \hline 2\ 0\ 9\ 9\ 3\ 2\ 4\ 9 \end{array}$$

5. (a) 
$$\begin{array}{r} 4\ 6\ \boxed{2}\ 2\ \boxed{1}\ 8 \\ + \boxed{5}\ \boxed{2}\ 6\ \boxed{9}\ 7\ \boxed{2} \\ \hline 9\ 8\ 9\ 1\ 9\ 0 \end{array}$$

(b) 
$$\begin{array}{r} 9\ \boxed{0}\ \boxed{0}\ \boxed{0}\ \boxed{0}\ \boxed{0} \\ - 8\ \boxed{8}\ \boxed{8}\ 8\ 9\ 9 \\ \hline 1\ 1\ 1\ 0\ 1 \end{array}$$

6. Rekha spent on furniture = ₹ 2,48,000  
 She spent on electronics = ₹ 4,00,111  
 She spent on furnishing = + ₹ 38,015  
 Total money spent = ₹ 6,86,126

7. Dinesh took a loan of = ₹ 1,00,00,000  
 He paid off = - ₹ 2,98,000  
 Loan left to be paid = ₹ 97,02,000

8. (b)  $(1,12,56,800 - 94,85,219 = 17,71,581)$   
 9. (c)  $(29,73,193 + 3,14,070 = 32,87,263 \text{ km}^2)$